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NRC-16-0070

10 CFR 50.54(f)

U. S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, DC 20555-0001

- References:
- 1) Fermi 2
NRC Docket No. 50-341
NRC License No. NPF-43
 - 2) NRC Letter, "Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Recommendations 2.1, 2.3, and 9.3, of the Near-Term Task Force Review of Insights from the Fukushima Dai-ichi Accident," dated March 12, 2012 (Accession No. ML12053A340)
 - 3) DTE Electric Company (DTE) Letter to USNRC, "DTE Electric Submittal of Flooding Hazard Reevaluation Report in Response to March 12, 2012 Information Request Regarding Flood Protection Evaluations," dated March 8, 2013 (Accession No. ML13070A199)
 - 4) DTE Electric Company (DTE) Letter to USNRC, Response to Request for Additional Information Regarding Fukushima Lessons Learned – Flood Hazard Reevaluation Report, dated June 26, 2014 (Accession No. ML14178B358)
 - 5) NRC Staff Requirements Memoranda to COMSECY-14-0037, "Integration of Mitigating Strategies for Beyond-Design-Basis External Events and the Reevaluation of Flooding Hazards," dated March 30, 2015 (Accession No. ML15089A236)
 - 6) Nuclear Energy Institute (NEI), Report NEI 12-06 [Rev 2], "Diverse and Flexible Coping Strategies (FLEX) Implementation Guide," dated December 2015 (Accession No. ML16005A625)
 - 7) U.S. Nuclear Regulatory Commission, JLD-ISG-2012-01, Revision 1, "Compliance with Order EA-12-049, Order Modifying Licenses with

Regard to Requirements for Mitigating Strategies for Beyond-Design-Basis External Events,” dated January 22, 2016 (Accession No. ML15357A163)

- 8) NRC Letter, “Fermi 2 - Staff Assessment of Response to 10 CFR 50.54(f) Information Request - Flood-Causing Mechanism Reevaluation,” dated December 30, 2014 (Accession No. ML14351A438)
- 9) NRC Letter, “Supplemental Information Related to Request for Information Pursuant to Title 10 of the Code of Federal Regulations 50.54(f) Regarding Flooding Hazard Reevaluations for Recommendation 2.1 of the Near Term Task Force Review of Insights from the Fukushima Dai-ichi Accident,” dated March 1, 2013 (Accession No. ML13044A561)
- 10) DTE Electric Company (DTE), “Compliance Letter and Final Integrated Plan in Response to the March 12, 2012 Commission Order Modifying Licenses with Regard to Requirements for Mitigating Strategies for Beyond-Design-Basis External Events (Order Number EA-12- 049),” dated January 20, 2016 (Accession No. ML16022A118)

Subject: Flooding Mitigating Strategies Assessment Report

On March 12, 2012, the NRC issued Reference 2 to request information associated with Near-Term Task Force (NTTF) Recommendation 2.1 for Flooding. One of the Required Responses in Reference 2 directed licensees to submit a Flood Hazard Reevaluation Report (FHRR). For Fermi 2, the FHRR was submitted on March 8, 2013 (Reference 3). The reevaluated flood hazard was further developed in response to requests for additional information (Reference 4). Per Reference 9, the NRC considers the reevaluated flood hazard to be “beyond the current design/licensing basis of operating plants.”

Concurrent to the flood hazard reevaluation, Fermi 2 developed and implemented mitigating strategies in accordance with NRC Order EA-12-049, “Requirements for Mitigation Strategies for Beyond-Design-Basis External Events.” In Reference 5, the Commission affirmed that licensees need to address the reevaluated flooding hazards within their mitigating strategies for Beyond-Design-Basis External Events, including the reevaluated flood hazards. Guidance for performing mitigating strategies assessments (MSAs) is contained in Appendix G of Reference 6, endorsed by the NRC (with conditions) in Reference 7. For the purpose of the MSAs, the NRC has termed the reevaluated flood hazard, summarized in Reference 8, as the “Mitigating Strategies

Flood Hazard Information” (MSFHI). Reference 6, Appendix G, describes the MSA for flooding as containing the following elements:

- Section G.2 – Characterization of the MSFHI
- Section G.3 – Comparison of the MSFHI and FLEX DB Flood
- Section G.4.1 – Assessment of Current FLEX Strategies (if necessary)
- Section G.4.2 – Assessment for Modifying FLEX Strategies (if necessary)
- Section G.4.3 – Assessment of Alternative Mitigating Strategies (if necessary)
- Section G.4.4 – Assessment of Targeted Hazard Mitigating Strategies (if necessary)

The following provides the MSA results for Fermi 2. Only Sections G.2 and G.3 of Reference 6, Appendix G, were required for Fermi 2, in accordance with Reference 8.

Reference 6, Section G.2 – Characterization of the MSFHI

Characterization of the MSFHI is detailed in Section 3 of Reference 8, the NRC’s interim response to the flood hazard reevaluation submittal and amended submittal (References 3 and 4). A more detailed description of the MSFHI, along with the basis for inputs, assumptions, methodologies, and models, is provided in the following references:

- Local Intense Precipitation (LIP): See Section 3.1 of Reference 3, Enclosure 1.
- Flooding in Streams and Rivers: See Section 3.2 of Reference 3, Enclosure 1.
- Dam Breaches and Failures: See Section 3.4 of Reference 3, Enclosure 1.
- Storm Surge: See Section 3.3 of Reference 3, Enclosure 1.
- Seiche: See Section 3.3 of Reference 3, Enclosure 1.
- Tsunami: See Section 3.8 of Reference 3, Enclosure 1.
- Ice-Induced Flooding: See Section 3.6 of Reference 3, Enclosure 1.
- Channel Migration or Diversion: See Section 3.7 of Reference 3, Enclosure 1.
- Combined Effects (including wind-waves and runup effects): See Section 3.5 of Reference 3, Enclosure 1, and Reference 4.
- Other Associated Effects (i.e. hydrodynamic loading, including debris; effects caused by sediment deposition and erosion; concurrent site conditions; and groundwater ingress): See Sections 3.10 and 4 of Reference 3, Enclosure 1, and Reference 4.
- Flood Event Duration Parameters (i.e., warning time, period of site preparation, period of inundation, and period of recession): See Sections 3.10 and 4 of Reference 3, Enclosure 1, and Reference 4.

At Fermi 2, the seiche, tsunami, ice-induced flooding, channel migration or diversion, and NUREG/CR-7046, Appendix H combined-effect floods H.1 (floods caused by precipitation events, including hydrologic dam failure), H.2 (seismically-induced dam failure), and H.3 (floods along the shores of open and semi-enclosed bodies of water)

flood-causing mechanisms were either determined to be implausible or completely bounded by other mechanisms.

In Reference 8, the NRC concluded that the “the reevaluated hazard results for each reevaluated flood-causing mechanism are bounded by the current design-basis flood hazard” for Fermi 2.

Reference 6, Section G.3 – Basis for Mitigating Strategies Assessment (FLEX Design Basis Comparison)

For Fermi 2, the FLEX design basis (FLEX DB) flood, described in Reference 10, is equivalent to the plant’s current design basis (CDB) flood. A complete comparison of the CDB and reevaluated flood hazards is provided in Section 4 of the Reference 3 Enclosure 1. As described in References 3 and 4, and summarized below, the CDB and FLEX DB floods bound the reevaluated flood (i.e., MSFHI) for all applicable flood-causing mechanisms, including associated effects and flood event duration parameters.

The NRC further affirms in Reference 8 that “the reevaluated flood hazard mechanisms are bounded by the CDB” and “it is unnecessary for the licensee [Fermi 2] to perform an integrated assessment or focused evaluation.”

Therefore, since the MSFHI is bounded by the FLEX DB (equivalent to the CDB), as affirmed by the NRC, Fermi 2 considers the requirement to address the reevaluated flooding hazards within its BDB mitigating strategies as being satisfied with no further action required.

This letter contains no new regulatory commitments and no revision to existing regulatory commitments.

Should you have any questions or require additional information, please contact Mr. Scott A. Maglio, Manager – Nuclear Licensing, at (734) 586-5076.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on December 9, 2016



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